Attitudes Toward the Human Immunodeficiency Virus in Health Care

An Honors Thesis (Honrs 499)

by

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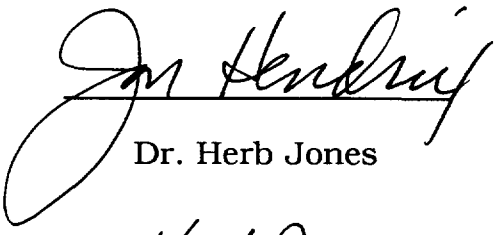

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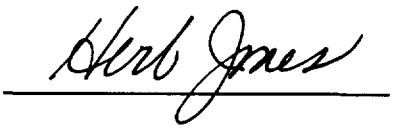

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Abstract

A survey of 275 university students revealed differences in attitudes held by nursing students and general studies students toward issues relating to the human immuondeficiency virus (HIV) in the health care setting. Nursing students were less supportive of HIV testing of both patients and health care workers and placed less importance on testing in the prevention of HIV transmission than their general studies counterparts. Nursing students were less likely to support statements requiring health professionals to reveal their HIV status to patients. Opinion within the nursing group was often diverse, while the general studies students' attitudes were often more uniform. Both groups demonstrated support for required education for health care workers.

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Since reports have surfaced suggesting that the human immunodeficiency virus (HIV) was transmitted from a dentist to several of his patients, the topic of HIV transmission in the health care setting has received much attention (Centers for Disease Control [CDC], 1991c; CDC, 1991d). Before this disclosure, existing documentation from the Centers for Disease Control (1987) primarily presented recommendations aimed at protecting the health care worker from the virus. Health care workers are considered as, "Persons, including students and trainees, whose activities involve contact with patients or with blood or other body fluids from patients in a health-care setting" (CDC, 1987, p. 3s). Although this incident of possible transmission of HIV from a dentist to his patients lacks a proven mechanism, some question has been raised about what level of risk exists of a patient contracting HIV in a health care setting (CDC, 1991b). The public (American Association of Blood Banks, 1991) and nursing students (Wiley, Heath, & Acklin, 1988) support testing of all patients for HIV upon entry into the hospital. Disclosure of the serostatus of health care providers including all physicians, dentists, and other health care workers is also favored by the public (Kantrowitz, et al., 1991). Both the public and health care professionals want some action to be taken to minimize the risks of transmitting the virus in the

health care setting.

Few regulations exist to guide the expectations of both health care workers and the public. Legislation has been proposed but not enacted stating that all health care workers who perform invasive procedures knowing that they carry HIV should be subject to a $10,000 fine and a ten-year prison term and that the recommendations of the CDC should become law (Williams, 1991). These and other proposals represent attempts by the government to respond to the demand to act in preventing HIV infection in the health care setting. Recommendations from the Centers for Disease Control provide a limited guide to what actions should be taken to prevent transmission of the virus in a health care setting because they hold no legal bearing on hospitals or health care workers. The CDC recommended, but did not mandate, testing of health professionals who participate in procedures where injury to the provider could cause the blood or body fluid of the health care worker to contact the patient's body cavity, subcutaneous tissues, and/or mucous membranes (CDC, 1991b). The role of testing and the responsibility of the health professional to be tested for HIV remains unclear; however, enforceable requirements have been published which mandate annual infection control training for health professionals (Department of Labor, 1991).

Several ambiguities concerning the information collected about HIV in the health care setting have influenced individuals' attitudes. Although the possibility of HIV transmission from the health care worker to the patient has received the most recent attention, transmission in the opposite direction should still be a concern because it occurs more frequently than transmission to the patient (Henderson, 1990). The chance of seroconversion following exposure of the health care worker to HIV infected blood or body fluids is estimated at 0.35% (Department of Labor, 1991).

Because the risk of a patient becoming infected by a health care worker is not precisely known, decisions regarding HIV in health care are complex. In as many as 31 retrospective studies of health professionals including surgeons infected with HIV, no patients have tested positive for the virus who did not demonstrate other high-risk behaviors, with the possible exception of the patients of the Florida dentist (CDC, 1991d; Danila, et al., 1991; Lewis, 1991; Rogers & Osborn, 1991; Williams, 1991). Present estimates of the risk of HIV transmission base calculations of risk on data from the hepatitis B virus and approximately ten years of experience with HIV (Henderson, 1990), although HIV is thought to be approximately 100 times less infectious than HBV (CDC, 1991b;

Henderson, 1990). Several models suggest that the risk of a patient contracting HIV from a health professional is between 1 in 28,000 to 1 in 21 million per hour of surgery (Lowenfels & Wormser, 1991; Williams, 1991). The chance of a patient contracting HIV in a health care situation is generally agreed to be remote, but cannot be reduced to zero or no risk (Price, 1991; Williams, 1991).

The role of mandatory testing is equally as controversial as the actual level of risk associated with HIV infection in the health care setting. Current testing procedures use repeated enzyme immunoassays (EIA) followed by a Western Blot to look for the production of antibodies, a phenomenon which usually occurs within six to twelve weeks of infection (CDC, 1987; CDC, 1991a; Karker-Jennings & Berkey, 1991). Due to the time needed to produce sufficient antibodies to yield a positive test result, a window exists when a person could be infected with the virus even though he or she has tested negatively for HIV. A negative test result, therefore, cannot guarantee that an individual is not infected with HIV (Burkhart et al., 1988). Frequency of testing and time-span for which the test results are considered valid would both be concerns of mandatory HIV testing (Henderson, 1990).

Testing of both patients and health care workers has

personal considerations in addition to the mechanics and validity of the HIV testing procedure. HIV testing must be performed in a confidential manner with the individual's consent in order to protect his or her right to privacy (Gostin, 1991). Although suggestions have been made that all patients should be tested for HIV (Smith, 1989), universal testing of patients and health care professionals is not thought to be a significant factor in preventing transmission of HIV in the health care setting (President's Commission Report, 1988; Rogers & Osborn, 1991). The unreliability of testing and the protection afforded to both the health care worker and the patient by barrier precautions both support the idea that health care workers need not be required to be tested for HIV. According to James S. Todd, Executive Vice President of the American Medical Association, "Since the AIDS epidemic began, use of universal precautions has resulted in no known incidents of HIV transmission from physician, nurses, or hospital employees to patients" (Jones, 1991). Universal precautions stipulating that all patients should be treated as if they are infected have been effective in preventing the transmission of HIV.

The risk which HIV poses in a health care setting, the limits of current HIV testing procedures, and the lack of enforceable

regulations may foster a wide range of opinions on what actions should be taken to prevent the spread of HIV in the health care setting. Where no consensus of data exists, emotions may become a dominant force in decision-making. The issues of HIV testing, performance of duties by the HIV infected health professional, the responsibility of the health care worker to inform patients of his or her HIV status, and the best means of preventing the transmission of the virus in the health care setting are areas where definitive answers have yet to emerge. This study attempts to determine if attitudes of student health professionals (nurses) about HIV in health care are similar to the attitudes held by their peers who are not preparing for employment in a health care setting.

Method

Instrument

A survey instrument (Appendix 1) was developed similar to one used by Dr. Mary Lou Fleissner, Chief Epidemiologist, Indiana State Department of Health (unpublished). This 16 item questionnaire covered topics of HIV testing, performance of duties by the HIV infected health professional, responsibility to inform patients of the health professional's HIV status, requiring infection control training for health care workers, and best means of preventing HIV infection in the health care

setting. This instrument was reviewed by several professionals and approved by the university review board before administration.

Subjects

In February and March 1992, 275 Ball State University students completed the instrument. Three individuals did not complete all questions. The respondents came from two separate populations. The first included senior nursing students participating in patient care externships, and registered nurses returning to complete a bachelor of science degree in nursing (n=111). The nursing student cohort was selected on the basis of the performance of duties in which direct contact with patients was required. The second population was a group of general studies students in a health science class (n=164). This group, selected as a representation of the university population, included students in a variety of fields of study. Although the classroom experiences of the latter group were focused primarily on health-related issues, HIV had not been covered at the time of administration of the instrument. The median year in course -work of nursing students was senior (IQR<0.05) and the median year in course-work of the general studies population was freshman (IQR=1.0).

Analysis

Responses were anonymously recorded on a Likert scale with a score of one corresponding to strongly agree and five corresponding to strongly disagree. Results were analyzed using a Mann-Whittney Ranks Test and SPSS software.

Results and Discussion

HIV testing

The nursing students appear to be less supportive of HIV testing of both patients and health care workers than the general studies students (Table 1). The nursing population demonstrates a wider range of responses on the issues of testing health care workers for HIV, suggesting that the nursing population may hold less homogeneous opinions on HIV testing of health care workers than the general public. General studies students do not show much change in opinion in regard to the testing of health care workers when the setting is changed from routine patient care to invasive procedures; however, the nursing population did feel differently about the necessity of testing of health care workers involved in patient care and invasive procedures. The responses of the nursing students may suggest that they can more easily discriminate between the duties involved in patient care and invasive procedures, which may both be unfamiliar

concepts to the general studies students. Knowledge of the limitations of HIV testing and concerns about privacy could also have an effect on attitudes related to HIV testing.

Table1: Attitudes toward HIV testing

Question number (Appendix 1) student group	Median	IQR*	p*
1. All patients admitted to the hospital should be required to have an HIV test.			
nursing (n=111)	3.0	2.0	<0.01
general studies (n=164)	2.0	2.0	
Health care workers should be tested for HIV if they perform:			
2. patient care.			
nursing (n=111)	4.0	2.0	<0.01
general studies (n=164)	1.0	1.0	
3. invasive procedures.			
nursing (n=111)	2.0	3.0	<0.01
general studies (n=164)	1.0	<0.05	

Performance of duties

Allowing the health professional infected with HIV to perform routine patient care is more acceptable to the nursing population than to general studies population (Table 2). Nurses may be sensitive to issues of job security and discrimination because they perceive themselves or their co-workers in

* In tables 1-5, IQR is rounded to nearest tenth and p is rounded to nearest 100th.

situations where these concerns might arise. Knowledge of infection control practices and the effectiveness of these procedures could be responsible for the nurses' more accepting attitude of health care workers with HIV continuing patient care. Both groups believe that health care workers infected with HIV should not be allowed to perform invasive procedures. This agreement may mean that both nursing and general studies populations are unwilling to accept the level of risk which they perceive a health care worker with HIV would pose in performing an invasive procedure.

Table 2: Attitudes toward the performance of duties

Question number (Appendix 1) student group	Median	IQR	p
If they use proper infection control procedures, health care workers infected with HIV should be allowed to perform:			
4. patient care			
nursing (n=111)	2.0	1.0	<0.01
general studies (n=164)	3.0	2.0	
5. invasive procedures			
nursing (n=111)	4.0	2.0	<0.01
general studies (n=164)	4.0	2.0	

Disclosure of health care worker's HIV status

Once a health care worker has had an HIV test, should he or she be required to inform his or her patients of the result of the test? General studies students' responses suggest that the health professional does have a responsibility to tell his or her patients of his or her HIV status (Table 3). Nursing students are less likely to agree that disclosure of the health care worker's HIV status to the patient should be required, particularly when general patient care is being performed. Less difference is seen between the two groups on required disclosure of the health care worker's HIV status when invasive procedures are being performed than when routine patient care is being performed. Differences which do occur between the two groups could result from differences in perception of risk which the HIV infected health professional may pose in patient care and invasive procedures, from knowledge of the limitations of current testing procedures, and from concerns about the privacy of the health care worker. Attitudes may also be influenced by knowledge of infection control procedures. One nursing student noted, "If proper procedures are followed 100%, nobody should be forced to reveal their status." This individual's attitude implies that infection control standards can prevent HIV infection and that health care workers should

utilize these practices.

Table 3: Attitudes toward disclosure of health care worker's HIV status

Question number (Appendix 1) student group	Median	IQR	p
A health care worker should be required to inform a patient of his or her HIV status before performing:			
6. patient care			
nursing (n=111)	4.0	2.0	<0.01
general studies (n=164)	2.0	1.0	
7. invasive procedures			
nursing (n=111)	2.0	2.0	<0.01
general studies (n=164)	1.0	1.0	

Required infection control training

Both nursing and general studies student populations agree on the importance of required education for all health professionals on infection control procedures (Table 4). This strong support for education holds regardless of whether the professional is a surgeon, physician, nurse, or other health care worker. The nursing population which appears to value education particularly strongly, may be influenced by previous infection control training and may have had more exposure to infection control practices than the general studies population.

Both populations might agree that education has the potential to protect patients and health care workers without harming either group.

Table 4: Attitudes toward required education

Question number (Appendix 1) student group	Median	IQR	p
Periodic educational programs on infection control procedures should be required for:			
8. surgeons.			
nursing (n=111)	1.0	<0.05	<0.02
general studies (n=164)	1.0	1.0	
9. all physicians.			
nursing (n=111)	1.0	<0.05	<0.01
general studies (n=164)	1.0	1.0	
10. nurses.			
nursing (n=111)	1.0	<0.05	<0.01
general studies (n=164)	1.0	1.0	
11. all health care workers.			
nursing (n=111)	1.0	<0.05	<0.01
general studies (n=164)	1.0	1.0	

Prevention of HIV transmission in health care

Preventing the transmission of HIV in the health care setting can be approached through testing of patients for HIV, testing of health care workers for HIV, or the use of infection control procedures. The general studies group supported the

testing of both patients and health care workers as the most important means of preventing HIV transmission (Table 5). Nursing students appear to be less supportive than the general studies students of the testing of patients and health care workers as an important means of preventing the transmission of HIV. The differences observed between the groups may be related to the fact that nursing students appear to be less in favor of testing of patients and health care workers than the general studies population (Table 1) or it may be due to the amount of protection which each group believes that testing could provide to both the patient and the health care worker. Although attitudes toward the role of testing differ between the two groups, proper use of infection control procedures is favored by both groups (Table 5).

Table 5: Attitudes toward the prevention of HIV transmission

Question number (Appendix 1) student group	Median	IQR	p
The most important means of preventing the transmission of HIV in the health care setting is:			
12. mandatory testing of all patients.			
nursing (n=110)	4.0	2.0	<0.01
general studies (n=164)	2.0	1.0	

Table 5 continued	Median	IQR	p
13. mandatory testing of all health care workers.			
nursing (n=110)	4.0	2.0	<0.01
general studies(n=164)	2.0	1.0	
14. strict adherence to infection control standards.			
nursing (n=110)	1.0	<0.05	<0.05
general studies (n=164)	1.0	1.0	

Conclusion

The results of this study were consistent with regulations requiring annual infection control training for health care workers but not requiring testing of patients or health care workers for HIV (Department of Labor, 1991). Education about accepted infection control procedures and the development of new techniques of preventing the transmission of the virus hold promise for calming some of the controversy of HIV in the health care setting. Present testing protocols may be supported by some for widespread use in screening for HIV; however, testing cannot afford protection from the virus. Reduction of contact with potentially infectious materials can decrease the chance of transmitting infection. Both health professionals and patients need to understand the relatively low degree of HIV transmission in the health care setting when proper infection control procedures are used. Fear and other

emotions expressed by both groups must be addressed by governing bodies such as the Department of Labor and licensing agencies of health professions as well as by the media in order to allow attitudes based on logic, not emotion, to prevail. Following the lead of required infection control education for health care workers, perhaps further educational efforts addressed specifically toward patients could minimize the differences in attitudes which may exist between health care workers and the general population on topics related to the transmission of HIV in the health care setting.

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HIV AND HEALTH CARE ATTITUDE SURVEY

This survey is designed to determine your attitudes toward several issues surrounding HIV, the virus which causes AIDS, and health care. Please fill in the letter corresponding to your response to each item on the scanning sheet provided. If you circle "no opinion," please state your reasons for selecting this choice on the back of this page. Additional comments are also welcome on the back of this page. Thank you for your cooperation.

I believe that:	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
1. All patients admitted to the hospital should be required to have an HIV test.	1	2	3	4	5
Health care workers should be tested for HIV if they perform:					
2. patient care	1	2	3	4	5
3. invasive procedures (such as surgery)	1	2	3	4	5
If they use proper infection control procedures, health care workers infected with HIV should be allowed to perform:					
4. patient care	1	2	3	4	5
5. invasive procedures	1	2	3	4	5
A health care worker should be required to inform a patient of his or her HIV status before performing:					
6. patient care	1	2	3	4	5
7. invasive procedures	1	2	3	4	5
Periodic educational programs on infection control procedures should be required for:					
8. surgeons	1	2	3	4	5
9. all physicians	1	2	3	4	5
10. nurses	1	2	3	4	5
11. all health care workers	1	2	3	4	5
The most important means of preventing the transmission of HIV in the health care setting is:					
12. mandatory testing of all patients	1	2	3	4	5
13. mandatory testing of all health care workers	1	2	3	4	5
14. strict adherence to infection control standards	1	2	3	4	5

15. Your year in school:	freshman	soph.	junior	senior	graduate
	1	2	3	4	5
16. Area of your anticipated profession:	business	education	art/music drama	health care	other
	1	2	3	4	5